

### **REMARKS/ARGUMENTS**

Upon entry of the instant amendment and consideration of the remarks below, it is respectfully submitted that the application is in condition for allowance. A revised sheet 3 of the drawings is included which indicates that Fig. 8 is prior art. In addition, claims 1 and 13 have been amended to distinguish the invention over the Herr reference. In addition, claim 13 has been amended as suggested by the Examiner to obviate the claim objection. The Applicant notes the allowance of claims 5-12 with appreciation. A minor amendment is made to claim 5 just for clarification. However, no substantive changes have been made. Thus, claims 5-12 should still be allowable. Claims 17 and 19 have also been indicated as allowable subject matter. These claims were converted to independent form and, thus, should be allowable. Accordingly, it is respectfully submitted that the application should be in condition for allowance.

### **CLAIM REJECTIONS – 35 U.S.C. § 102**

Claims 1-3, 13-16, and 18 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Herr, U.S. Patent No. 6,154,044. In order for there to be anticipation, each and every one of the elements of the claims must be found in a single reference. It is respectfully submitted that the claims, as amended, recite subject matter clearly not disclosed or suggested by the Herr patent. For example, the claims now recite a current regulated superconducting logic device which includes a non hysteretic Josephson junction coupled between an external power supply and the first node, as well as a biasing resistor coupled between the node and the superconducting logic device.

With reference to Fig. 2 in the Herr patent, the device 50 is identified as a superconducting logic gate assembly. As indicated in Fig. 2 of the Herr patent, a DC supply is applied to the logic device by way of a voltage dividing resistor network formed from the resistors 40 and 42 (*"The OUTPUT is coupled across the output SQUIDS 31 and is dropped across output resistors 40. An additional resistor 42 divides the voltage drop across the DC*

*power supply 20 and the output SQUID 30 depending upon the conductive state of the Josephson junction device 32.”*; Herr patent, column 6, lines 3-6). Thus, it should be clear that the Herr patent does not disclose or suggest a non hysteretic Josephson junction between the external power supply and a node. Rather, as is clearly shown in Fig. 2 of the Herr patent, a voltage-dividing resistor 42 is disposed between the external power supply and a first node.

There are other differences between the claims as amended and the disclosure of the Herr patent. For example, claim 1, as well as dependent claims 2 and 3, now recite a hysteretic Josephson junction conducted between the node and ground and a biasing resistor coupled between the node and the superconducting logic device. For the Examiner's convenience, the Examiner may wish to view Fig. 4 of the instant application. Claim 1 reads on Fig. 4 of the instant application. As the Examiner can clearly see, the difference between claim 1, as amended, and the Herr patent relate to the input circuitry to the logic gate. Clearly, the input circuitry to the logic circuit 50, as shown in Fig. 2, is clearly different and consists solely of the resistor 42 in the Herr patent.

Claim 13 as well as the claims dependent thereupon, 14, 15, 16, 18, and 20, recite a current regulator for a superconducting logic device that includes a non hysteretic Josephson junction. In series with a damping impedance and a superconducting logic device. Claim 13 and its dependent claims (i.e., 14-16, 18, and 20) read on Fig. 7 of the instant application. Comparing Fig. 7, for example, with Fig. 2 of the Herr patent clearly illustrates that the configuration of the circuit as recited in the claims at issue is clearly different from the circuit disclosed or suggested by the Herr patent. For all of the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 1-3, 13-16, and 18.

#### **CLAIM REJECTIONS – 35 U.S.C. § 103**

Claims 4 and 20 have been rejected under 35 U.S.C. § 103 as being unpatentable over the Herr patent. Claim 4 is dependent upon claim 1 and has been discussed above. Claim 20 is

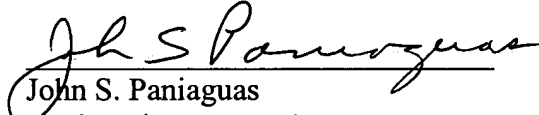
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dependent upon claim 13 and has been discussed above. For the reasons set forth above, the Examiner is respectfully requested to reconsider and withdraw the rejections of claims 4 and 20.

Respectfully submitted,

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